



Climate Change and Transportation Planning

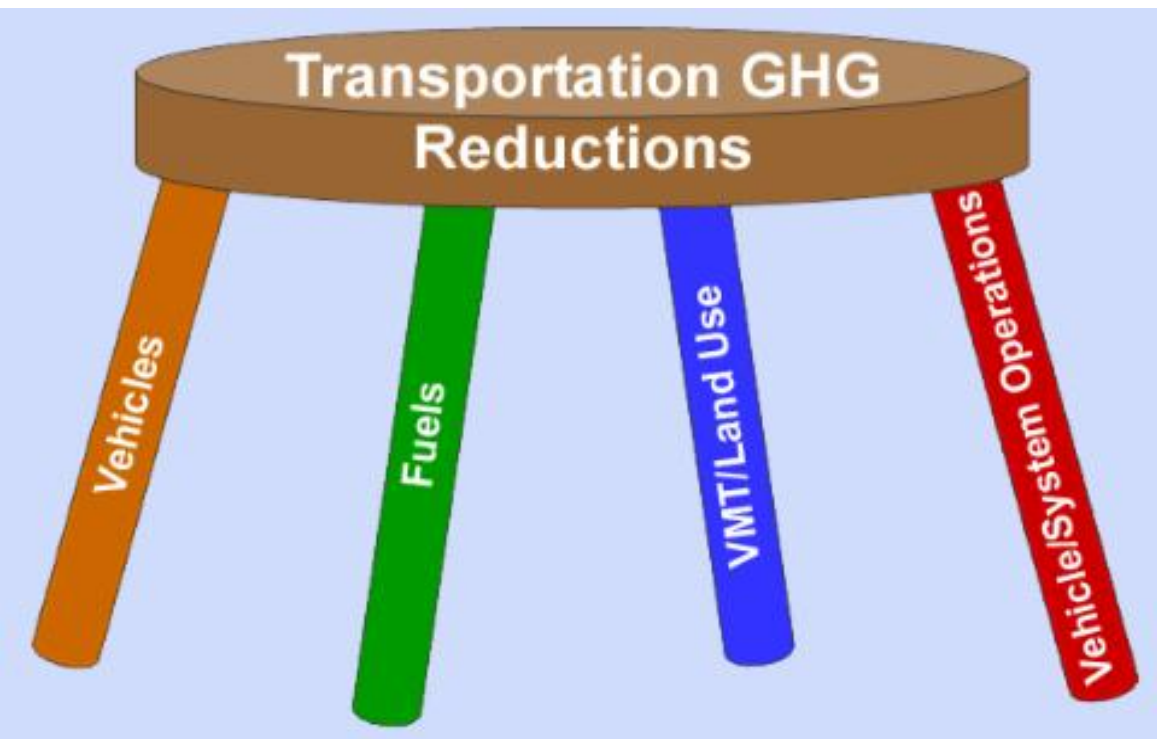
**Illinois Fall Planning Conference
October 16, 2009**



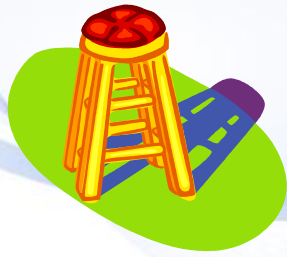


What can be done to reduce Greenhouse Gases?

Multiple Transportation Strategies



- Raise vehicle energy efficiency
- Reduce carbon content of fuels
- Reduce VMT
Land use
- Improve system and operational efficiencies



“Two Legs of the Stool”



Transportation System Efficiencies

- **Traffic flow improvements**
 - ITS/Management and Operations
 - Improved Intermodal connections



Travel (by SOV) Activity Reduction

- **Reducing VMT**
 - Land Use strategies
 - Bike/ped
 - Transit
 - Pricing





Planning Factors

- Accessibility and mobility
- Protect and enhance the environment
- Safety
- Security
- Promote energy conservation
- Improve quality of life
- Promote consistency between transportation and planned growth and economic development
- Efficient system management and operation
- Preservation of existing system

Transportation Plan



- Integrated multimodal system
- Transit, multimodal & intermodal, pedestrian walkways & bike facilities
- Operational and management strategies
- Environmental mitigation
- Consultation

A Place to Start



Federal Highway Administration

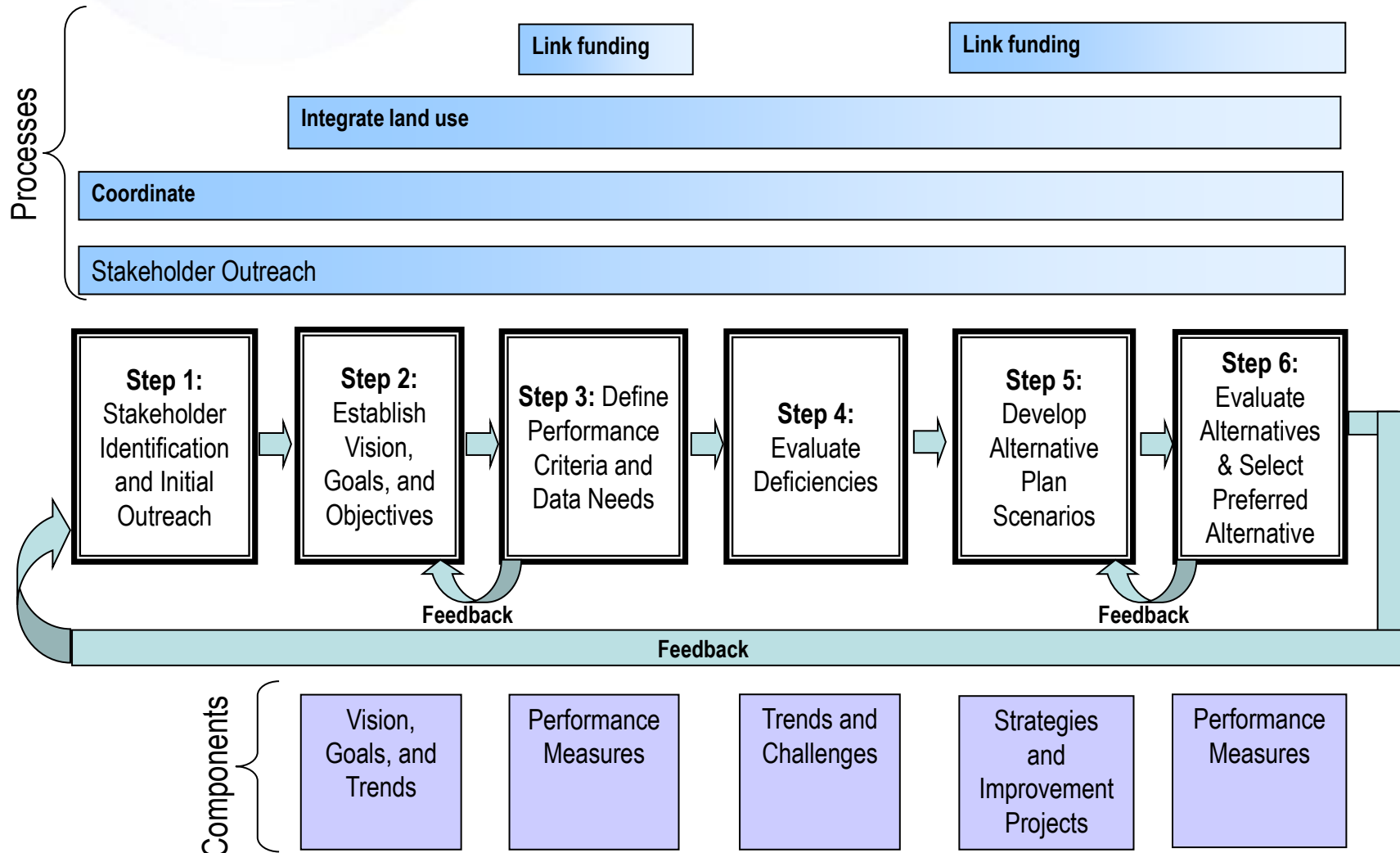
Integrating Climate Change into the Transportation Planning Process

Final Report

July 2008

<http://www.fhwa.dot.gov/hep/climatechange/index.htm>

Climate Change in Planning



Overview of Current Practice



- **Acknowledge connection between transportation and climate change**
- **Mitigation of GHG emissions**
 - **(vision – goals – policies – strategies)**
- **Performance measures**
 - **Related to GHG emissions**
- **Quantifying GHG emission**
 - **Emerging: tools, methods, data**

Climate Change in Current Statewide Plans

DOT	Status of LRTP	Trends & Challenges	Vision & Goals	Policies & Strategies	Performance Measures
Maine	adopted 2007	■	■	■	
New Mexico	adopted 2005				
Arizona	adopted 2004				
Colorado	adopted 2008	■			
Connecticut	adopted 2004	■	■	■	
Massachusetts	adopted 2006			■	
Maryland	draft goals 2008				
Oregon	adopted 2006	■	■	■	
Washington	adopted 2006	■			
California	adopted 2006	■	■	■	
Florida	adopted 2005		■		
New York	adopted 2006			■	

■ Climate change mitigation

■ Climate change mitigation & adaptation

Source: ICF International, *Integrating Climate Change Considerations into the Transportation Planning Process*. Prepared for Federal Highway Administration, July 2008. Available at: <http://www.fhwa.dot.gov/hep/climatechange/climatechange.pdf>

Climate Change in Current RTPs

MPO Region	Status of LRTP	Trends & Challenges	Vision & Goals	Policies & Strategies	Performance Measures
Albany, NY	draft August 2007			■	
Baltimore	adopted Nov 2007	■		■	
Chicago	updated June 2007		■		
Denver	adopted Dec 2007				
Eugene, OR	final draft Sep 2007			■	
Grand Rapids, MI	adopted April 2007	■			
Houston-Galveston	updated Oct 2007	■			
Missoula, MT	adopted May 2004		■		
Philadelphia	adopted 2005				
Portland, OR	final draft Jan 2008	■	■	■	■
Sacramento	draft Nov 2007	■		■	
Salt Lake City	adopted May 2007				
San Diego	adopted Nov 2007	■	■	■	
San Francisco	draft goals 2008		■		■
Santa Fe, NM	draft due 2009				
Seattle	adopted Spring 2008**	■	■	■	■
Southern California	adopted May 2008	■			■
Washington, DC	adopted Oct 2006				

- Climate Change Mitigation
- Climate Change Mitigation & Adaptation

Source: ICF International, *Integrating Climate Change Considerations into the Transportation Planning Process*. Prepared for Federal Highway Administration, July 2008. Available at: <http://www.fhwa.dot.gov/hep/climatechange/climatechange.pdf>

** Refers to Vision 2040, a regional growth, transportation, and economic strategy.



Integration of Climate Change Considerations in Statewide and Regional Transportation Planning



Final Report July 2009



http://climate.dot.gov/state-local/integration/planning_process.html



Integration of Climate Change Considerations in Statewide and Regional Transportation Planning



➤ Case Studies and Proceedings

- TRB Panel
- AMPO Conference

➤ Climate Change in Transportation Planning

- Vision and long range planning
- Forecasts, data and performance measures
- Public involvement
- Collaboration with partners
- Project selection



Example Strategies



➤ Mitigation Strategies

- Alternative vehicle and fuel technologies
- More efficient land use patterns
- Increase use of transit, freight rail, bicycling, walking
- Limit use of GHG emitting construction materials
- Increase investment in non-motorized transportation
- Low-GHG fuel
- Tailpipe emission standards
- Slow VMT growth
- Increase low-GHG travel choices
- Shift freight from highways to rail and marine modes



Example Strategies, continued



➤ Mitigation Strategies

- Congestion relief
- Public transit
- Coordination of transportation/land use
- Pay as you drive insurance
- Congestion pricing
- Anti-idling measures
- Operations
- Eco-driving
- Commute travel reduction
- Highway operations and management

➤ Recognize Existing Strategies that reduce GHG





What is Adaptation?

Actions to avoid, withstand, or take advantage of climate changes and impacts

- **Adapting transportation assets to the new and emerging effects of climate change**
- **Magnitude difficult to assess**
- **Potential implications for where we locate and how we build**

Adaptation Options



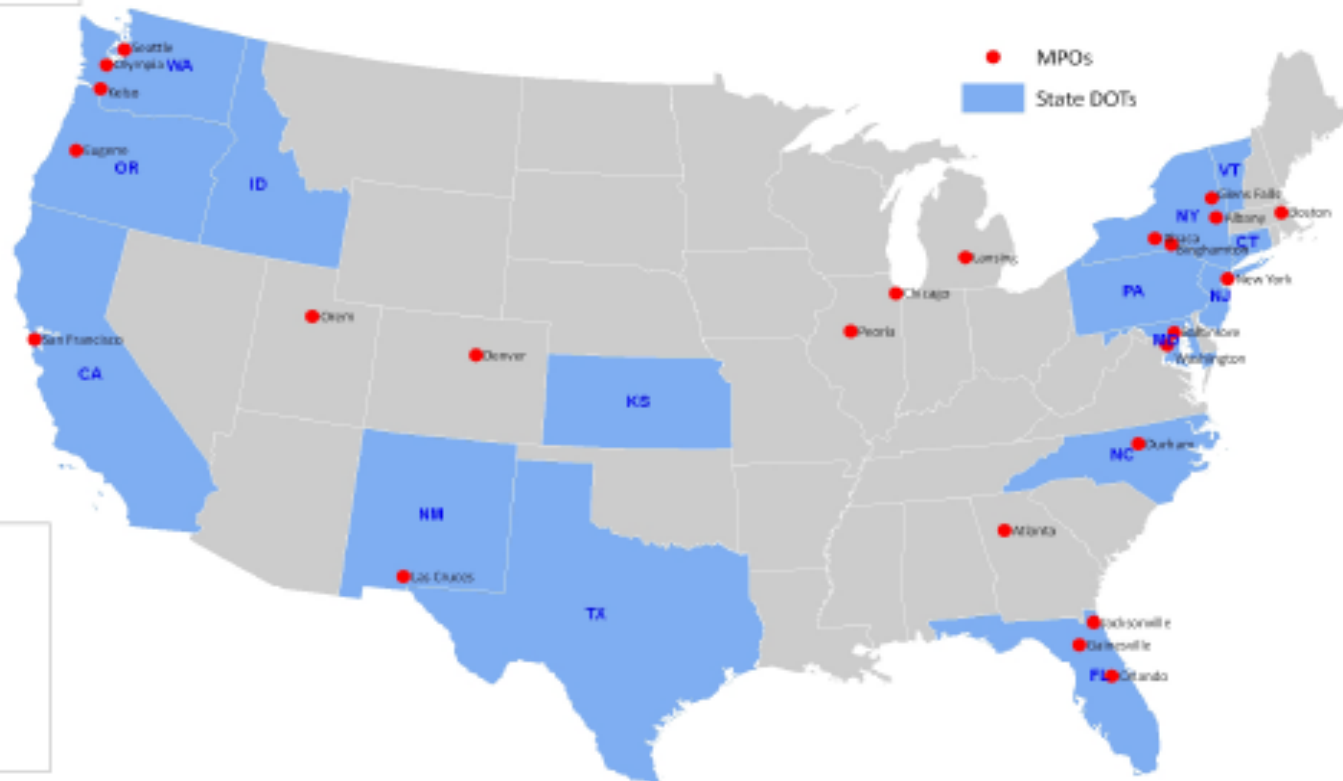
- **Maintain and manage**
 - Higher maintenance costs
- **Protect, strengthen**
 - Sea walls and buffers
 - Design changes when rebuilding
- **Relocate**
 - Move key facilities, site new facilities in less vulnerable locations
- **Abandon and Disinvest**
- **Enhance redundancy**



FHWA Peer Exchanges



DOT and MPO Participation in FHWA Climate Change & Transportation Peer Workshops During 2008



What Are We in FHWA doing? (Mitigation)



- Working with stakeholders to develop effective policy approaches for reducing the growth in VMT
- Assessing and analyzing the most cost-effective mitigation strategies and the reductions associated with “bundling” those strategies
- Playing key roles in the Secretary’s Livability Initiative and the HUD-DOT-EPA Sustainable Communities Partnership
- Offering technical assistance to State DOTs and MPOs in an effort to update existing models and provide training on MOVES
- Carbon sequestration pilot program



What Are We in FHWA doing? (Adaptation)



- **Developing strategy to address adaptation to climate change effects**
- **Interim framework on conducting assessments of transportation infrastructure vulnerable to global climate change effects**
 - Implementation Pilots for Framework
- **Guidelines for consideration of global climate change impacts and adaptation in project development and environmental review**
- **Coordination activities with NOAA/NWS**
- **Peer exchanges**





For More Information:

Federal Highway Administration Climate Change Website:

<http://www.fhwa.dot.gov/hep/climate/index.htm>

US DOT Transportation and Climate Change
Clearinghouse:

<http://climate.dot.gov/index.html>

